Reliability Centered Building and Equipment Acceptance – Course Description

During the course of new construction, major repair, or rehabilitation of facilities, it is not unusual to discover installed systems and equipment that contain latent defects due to manufacturing and/or installation practices or that do not operate per design. During recent inspections at three Federal installations, 85-100% of the rotating equipment at each was misaligned, out-of-balance or contained defective bearings. These types of systems or facilities defects result in premature failures which, to preclude unsafe conditions and to ensure reliable mission support, require unbudgeted corrective action by the installation.

This course focuses on the use of Reliability Centered Maintenance (RCM) principles, and specifically on Predictive Testing and Inspection (PT&I) technologies, by the construction contractor to detect latent manufacturing and installation defects as part of the Contractor's Quality Control program. The course does not, nor is it intended to, address all aspects of Traditional and Total Building Commissioning as widely practiced in industry and already addressed in existing commissioning guides, procedures and standards. Rather, the course shows how RCM and PT&I can work in conjunction with traditional and total building commissioning procedures and parameters prior to and during the equipment start-up/check-out phase of new construction, repair and rehabilitation projects to ensure quality installation and accurate baseline documentation.

Upon completion of this program participants will:

- Understand the principles of RCM and its role in facilities and equipment acceptance.
- Know the principles behind and value of PT&I technologies used during facilities and equipment acceptance, including: vibration monitoring, infrared thermography, airborne ultrasonics, alignment and balance, insulation power factor, lubrication and hydraulic oil testing, dissolved gas analysis, insulating oil testing, insulation resistance testing and polarization index, electrical motor tests, battery impedance test, and other inspection technologies.
- Demonstrate the use of actual PT&I testing equipment and its capabilities.
- Know personnel training and certification requirements, equipment specification requirements and relative costs.

Target audience: Design engineers, project and program managers, construction managers and inspectors, quality control personnel, and quality assurance staff.
